[0016] **FIG. 4** is a diagram illustrating an example of a first "iconic" usage mode of the touch screen;

[0017] **FIG. 5** is a diagram illustrating the touch screen image of **FIG. 4** modified to indicate the activated state of the touch screen using a dashed line around each icon that is touch-sensitive in the activated state;

[0018] **FIG. 6A** is a diagram illustrating a portion of the keyboard featuring several keys;

[0019] **FIG. 6B** is a diagram illustrating one possible arrangement of a special touch sensitive region or second touch sensor could be provided that activates the touch screen when touched;

[0020] **FIG. 7A** is a diagram illustrating small icons that may be smaller than a finger and may be completely obscured by the finger when the finger touches them;

[0021] **FIG. 7B through 7E** illustrate several mechanisms to eliminate the problem of obscuring small icons;

[0022] **FIGS. 8A through 8D** are diagrams illustrating use of a small control panel on the touch screen associated with an application, reserving the entire main display for visual data associated with the application;

[0023] **FIG. 9** is a diagram showing an example use of the touch screen to display subsidiary help text;

[0024] **FIG. 10A** is a diagram illustrating employment of the touch screen to display a find/replace dialog on the touch screen, leaving the main display free to display a document unobstructed;

[0025] **FIG. 10B** is a diagram illustrating use of the touch screen to act as a joystick emulator while displaying the control layout established by the game, leaving the main display free to display game graphics unobstructed;

[0026] **FIG. 10C** is a diagram illustrating an example in which a touch screen image includes icons drawn from a typical toolbar, leaving the main display free to display document or an image unobstructed;

[0027] **FIG. 11** is a diagram illustrating a pop-up image including various icons representing commonly used tools and software applications on the computer;

[0028] **FIG. 12** is a diagram illustrating a pop-up calculator application that operates entirely within the touch screen;

[0029] **FIG. 13A and 13B** are diagrams illustrating different features of a magnifier as a pop-up image on a touch screen, leaving the main display undisturbed;

[0030] **FIG. 13C** is a diagram illustrating a debugger implemented as a pop-up application on a touch screen, providing a secondary debugging display with no extra cost or bulk;

[0031] **FIG. 14** is a diagram illustrating an example of an ideographic handwriting entry system on a touch screen in which a handwriting entry area responds to finger touch to enter an ideographic character;

[0032] **FIG. 15A** is a diagram illustrating use of a touch screen as a user interface device for a computer security interlock;

[0033] **FIG. 15B** is a diagram illustrating an exemplary hardware architecture for implementing the computer security interlock of **FIG. 15A**; and

[0034] **FIG. 16** is a diagram illustrating an exemplary software architecture for a touch screen.

DETAILED DESCRIPTION

[0035] Those of ordinary skill in the art will realize that the following description of the present invention is illustrative only and not in any way limiting. Other embodiments of the invention will readily suggest themselves to such skilled persons.

[0036] **FIG. 1** illustrates a notebook computer system **100** with main display **102** and keyboard **104**. Touch screen **106** is mounted in palm rest **110**. The touch screen is typically equipped with left and right "mouse" buttons **108**. Touch screen **106** is integrated into computer system **100** in a similar way as a touch pad would be in a prior art computer. Touch screen **106** will usually be located in the palm rest as shown in **FIG. 1**, but other locations are equally applicable, such as above the keyboard, adjacent to the keyboard or main display, or located in a separate enclosure connected by cable or wireless link to the computer. Although touch screen **106** usually replaces the conventional touch pad of a computer, touch screen **106** could be introduced in addition to the other user interface devices of the computer.

[0037] **FIG. 2** illustrates an illustrative embodiment of touch screen **106** in greater detail. Touch screen assembly **200** consists of touch sensor **202**, display **204**, and backlight **206** stacked or laminated together. Touch screens can be built in a variety of alternative ways as are well known in the art. For example, touch sensor **202** can be an active sensor employing capacitive, resistive, inductive, or other methods, or it can be a passive surface on which touch sensing is accomplished by optical, acoustic, or other methods. Capacitive touch sensors are ideally suited for use in the present invention due to their sensitivity, low cost, ruggedness, and suitability to small sensing areas. However, any touch screen technology would serve for the present invention.

[0038] Similarly, display **204** can be a liquid crystal display (LCD), organic light emitting diode (OLED) display, electroluminescent display, or any other type of small display suitable for mounting in a portable computer. LCD displays are ideally suited for use in the present invention due to their low cost and availability, but other types of displays may be employed. Display **204** may be color or monochrome, and need not have the same resolution, color capabilities, or other qualities as the main display of the computer.

[0039] The touch screen assembly may include a backlight **206** to enhance readability in all lighting conditions. In alternative embodiments, backlight **206** may be replaced by a frontlight, passive reflector, or other light source, or it may be omitted altogether.

[0040] Touch screen assembly **200** may include additional layers or components to assist the mounting or mechanical properties of the touch screen or to integrate the touch screen with other components of the computer system. The touch screen may also include hardened, antireflective, textured, or